

CLAIMS

What is claimed is:

- 1 1. A magnetic disk having a low surface microwaviness at a scale of about 200
2 microns and higher, and a high surface roughness at a scale of less than about a
3 length of a pad of a slider carrying a head for writing to the disk.

- 1 2. A method as recited in claim 1, wherein the disk has a high surface roughness at a
2 scale of less than about 200 microns.

- 1 3. A method as recited in claim 1, wherein the disk has a high surface roughness at a
2 scale of less than about 100 microns.

- 1 4. A method as recited in claim 1, wherein the disk has a low surface microwaviness
2 at a scale of between about 500 and 1000 microns.

- 1 5. A method as recited in claim 1, wherein the disk has a low surface roughness at a
2 scale of about 5 microns or less.

- 1 6. A method as recited in claim 1, wherein the low surface microwaviness is defined
2 by an average standard deviation of about 3 angstroms or less of topographical
3 features of the disk surface at the prescribed scale.

1 7. A method as recited in claim 1, wherein the high surface roughness is defined by
2 an average standard deviation of about 4.5 angstroms or more of topographical
3 features of the disk surface at the prescribed scale.

1 8. A method as recited in claim 1, wherein the slider flies at a fly height of about 5
2 nanometers or less from the disk surface.

1 9. A magnetic disk having a low surface microwaviness defined by an average
2 distance of about 3 angstroms or less as measured from peak to valley of
3 topographical features of the disk surface at a scale of about 200 microns and
4 higher, and a high surface roughness defined by an average distance of about 4.5
5 angstroms or more as measured from peak to valley of topographical features of
6 the disk surface at a scale of less than about a length of a pad of a slider carrying a
7 head for writing to the disk.

1 10. A method as recited in claim 9, wherein the disk has a high surface roughness at a
2 scale of less than about 200 microns.

1 11. A method as recited in claim 9, wherein the disk has a high surface roughness at a
2 scale of less than about 100 microns.

- 1 12. A method as recited in claim 9, wherein the disk has a low surface microwaviness
- 2 at a scale of between about 500 and 1000 microns.

- 1 13. A method as recited in claim 9; wherein the disk has a low surface roughness at a
- 2 scale of about 5 microns or less.

- 1 14. A method as recited in claim 9, wherein the slider flies at a fly height of about 5
- 2 nanometers or less from the disk surface.

- 1 15. A magnetic storage system, comprising:
- 2 a magnetic disk;
- 3 at least one head for reading from and writing to the magnetic media;
- 4 a slider for supporting the head, the slider having a pad; and
- 5 a control unit coupled to the head for controlling operation of the head;
- 6 wherein the disk has a low surface microwaviness at a scale of about 500 microns
- 7 and higher, and a high surface roughness at a scale of less than about a
- 8 length of the pad of the slider.